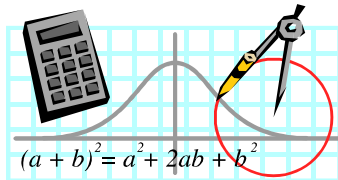




2001 Annual Growth Report



Harford County Government Department of Planning and Zoning

James M. Harkins
Harford County Executive
Preserving our values, protecting our future

John J. O'Neill, Jr.
Director of Administration

Joseph Kocy
Director of Planning and Zoning

EXECUTIVE SUMMARY

In accordance with the Harford County Adequate Public Facilities provisions (Section 267-104) of the Harford County Code, the Harford County Annual Growth Report must be updated annually to identify any facilities that are below the County's adopted minimum standards. This year's Annual Growth Report includes information and analysis regarding Public Schools, Water and Sewerage System, and Road Intersections.

Harford County Public Schools:

The adopted adequacy standards for the Public School system are:

Elementary Schools - 120 % of rated capacity within 2 years.

Secondary Schools - 120 % of rated capacity within 3 years.

Preliminary Plans for new developments cannot be approved in elementary school districts where the full-time enrollment currently exceeds or is projected to exceed 120 percent of the capacity within two years. Thirty of the thirty-one elementary schools currently meet adequacy standards. The projected enrollment rate for the Forest Hill Elementary School during the 2003/2004 school year is 810 for a utilization rate of 125 percent. No planning and/or construction funds have been identified at this time. New developments within this attendance area will not be approved but will be reviewed and placed on a waiting list until capacity is available for the year beginning July 1, 2002.

Preliminary plans for new developments cannot be approved in secondary school districts where full-time enrollment currently exceeds or is projected to exceed 120 percent of the capacity within three years. Fifteen of the seventeen middle and high schools in Harford County meet adequacy standards. The projected enrollment for the Southampton Middle School during the 2002/2003 school year is 2,067 for a utilization rate of 137 percent. No planning and/or construction funds have been identified at this time. As occurred during the July 1, 2001 to June 30, 2002 period, any preliminary plans for new developments within this attendance area will not be approved but will be reviewed and placed on a waiting list until capacity is available for the year beginning July 1, 2002.

The projected enrollment for C. Milton Wright High School during the 2003/2004 school year is 2,016 for a utilization rate of 124 percent. No planning and/or construction funds have been identified at this time. As occurred during the July 1, 2001 to June 30, 2002 period, any preliminary plans for new developments within this attendance area will not be approved but will be reviewed and placed on a waiting list until capacity is available for the year beginning July 1, 2002.

Harford County Water and Sewerage System:

Based on the Adequate Public Facilities Ordinance and the Harford County Water and Sewer Design Guidelines, preliminary plan approvals, Public Works Utility Agreements, and building permits in areas served by public water and sewer systems can be approved only where adequate capacity exists in the water and wastewater treatment facilities and in distribution and collection lines serving the area.

Harford County's sewerage system's average flow to the Sod Run Wastewater Treatment Plant is 11.5 Million Gallons per Day (MGD) while the design capacity is 20.0 MGD for a total Average Reserve of 8.5 MGD (as of December 2001). The County water system's current average daily usage is 11.8 MGD with a peak day consumption of 17.2 MGD. The Water Treatment capacity is 19.93 MGD, leaving a total reserve of 7.5 MGD (as of December 2001). These figures refer only to a county-wide total capacity figure.

The determination of water or sewerage capacity in a specific area of the County can be found in the "Water and Sewer 2001 Adequate Public Facilities Report " with appropriate guidance from the Department of Public Works. A determination of adequacy is made prior to preliminary plan approval, site plan approval, public works utility agreement execution, and building permit approval.

The water system is evaluated for adequacy for providing flows during the maximum day demand with the minimum required pressures for fire flows. Water booster stations and/or transmission lines, service mains, storage tanks, and water treatment plants are evaluated. Areas within the Harford County Development Envelope that exist at the highest elevations of the water pressure zones are evaluated for adequacy on a case-by-case analysis. The anticipated growth within the County is accommodated through a combination of developer funded projects and the County Capital Improvement Program.

The sewer system is evaluated to accommodate expected peak flows through collectors, interceptors, pump stations, force mains, and wastewater treatment plants. Should a problem exist in a collector sewer, it is the developer(s) responsibility to resolve the inadequacy. Inadequacies at major pumping stations and wastewater treatment plants are resolved by programmed capital projects or by projects cooperatively supported by a group of developers.

Harford County Road System:

To determine existing service levels at intersections and the impact of additional traffic, a Traffic Impact Analysis (TIA) must be submitted for developments that generate 249 trips per day at the time of preliminary/site plan review. Proposed development located within the Route 40 Overlay District will not be required to submit a Traffic Impact Analysis unless the proposed use will generate 1,500 trips per day at the time of preliminary/site plan review.

The adequacy standards for road intersections within the study area are based on the property's location within or outside the Development Envelope and are defined as follows:

Inside the Development Envelope: Level of Service (LOS) D.

If existing LOS is E or F at an intersection within the Development Envelope, the developer must mitigate the development's new trips.

Outside the Development Envelope: Level of Service (LOS) C.

If the existing LOS is D or lower, then the developer must mitigate the development's new trips.

A developer is required to provide improvements at intersections within the study area where trips generated by the development lowers the Level of Service (LOS) below the adopted standards. These improvements must bring the level of service to the adopted standard. If the TIA determines that the existing level of service does not meet the adopted standards, the subdivider must mitigate the impact of the trips generated from the development site. The study area is defined for areas within and outside the development envelope as:

Inside the Development Envelope: The TIA study area shall include all the existing County and State roads from point of entrance of site to the second intersection of an arterial roadway or higher functional classification road, in all directions. Developments which generate 1,500 or more trips per day may be required to expand the study area.

Outside the Development Envelope: The TIA study area shall include all existing County and state roads from point of entrance to first intersection of a major collector or higher functional classification road, in all directions.

The determination of existing and projected Levels of Service is calculated in the Traffic Impact Analysis, which is performed by the developer and reviewed by the Departments of Harford County Government

2001 Annual Growth Report

Planning and Zoning and Public Works.

In addition to the review of individual Traffic Impact Analyses, the Departments of Planning and Zoning and Public Works have studied a number of major roads and intersections to identify existing conditions. This list represents a cross section of key intersections located inside, outside, and on the fringes of the Development Envelope. There is one signalized and two unsignalized intersections with one or more movements operating at a LOS E or lower during peak hours.

The following intersections contain one or more movements that operate at an unacceptable LOS. The evaluation of the LOS is determined on performance of the intersection during one hour peak traffic periods in the a.m. and/or p.m.:

1. Maryland Route 24 and Maryland Route 924 (Tollgate)
2. Maryland Route 924 and Plumtree Road
3. Maryland Route 24 and Forest Valley Road

Developments that impact these intersections will be required to mitigate their impacts to the intersection.

INTRODUCTION

The Annual Growth Report is an on-going analysis of growth trends, facility capacity and service performance. This report was prepared by the Department of Planning and Zoning in coordination with the Department of Public Works - Water and Sewer and Engineering Divisions and the Board of Education. This report provides information on the present development activity as well as past trends and future projections for Harford County and the region.

The information in this report will be used by public officials, citizens and private developers for various purposes:

- to assess facility adequacy during the development review and approval process;
- to assess facility capacity in regard to zoning reclassification decisions;
- to support the evaluation of priority projects in the annual Capital Budget review;
- to identify critical deficiencies which require prompt attention by the County.

GROWTH TRENDS

Population Projection Methodology

Yearly estimates of population and households in Harford County for the Annual Growth Report are determined from the 2000 Census. This data is adjusted to reflect a number of variables including building permits, average household size and household vacancy rates.

The 5 and 10 year projections are based on these estimates with a growth factor applied to determine the rate and quantity of growth in the County. This growth factor is based on the number of building permits anticipated to be issued each year. It is important to note that projections are based on past trends and land availability. The population projections for the five remaining jurisdictions in the Baltimore Region are based on an interpolation of the Baltimore Metropolitan Council's Round 5-D population forecast.

The 2000 Census information at the census block level is utilized for specific analysis of each facility regarding area maps and demographic information. Building permits are identified by facility areas, by subdivision name and/or address of each building permit for each year. This provides the needed information on growth trends by facility service area.

Table 1
Harford County - Baltimore Region
Residential Permit Activity
1997 - 2001

Jurisdiction	1997	1998	1999	2000	2001	Total	Percentage of Baltimore Region
Harford County	1,695	1,704	1,964	1,593	2,057	9,013	15.4%
Anne Arundel County	2,930	3,822	3,682	2,898	2,763	16,095	27.5%
Baltimore City	183	152	200	212	216	963	1.6%
Baltimore County	3,199	3,695	3,309	2,916	3,618	16,737	28.5%
Carroll County	778	919	1,108	1,258	1,364	5,427	9.3%
Howard County	2,027	2,255	2,365	2,240	1,509	10,396	17.7%
Total	10,812	12,547	12,628	11,117	11,527	58,631	100.0%

NOTE: Permit totals do not reflect cancelled permits.

Source: Baltimore Metropolitan Council, February, 2002.

Table 2
Harford County - Baltimore Region
Population and Household Projections
2001 - 2011

Jurisdiction	2001 Population	2001 Households	2006 Population	2006 Households	2011 Population	2011 Households
Harford County	222,000	81,215	230,040	87,000	238,700	92,640
Anne Arundel County	495,725	181,556	522,440	194,900	534,260	203,700
Baltimore City	651,603	258,817	653,960	263,520	656,740	269,640
Baltimore County	756,554	302,403	767,860	314,000	778,860	320,880
Carroll County	153,398	53,501	165,460	58,440	175,680	63,160
Howard County	252,900	92,800	264,200	101,500	276,600	109,000
Total	2,532,180	970,292	2,603,960	1,019,360	2,660,840	1,059,020

Source: Baltimore Metropolitan Council, March, 2002.

Table 3
Baltimore Region
Employment Projections
2001 - 2011

Jurisdiction	2001 Employment	2006 Employment	2011 Employment
Harford County	97,820	106,300	111,980
Anne Arundel County	293,760	304,000	313,100
Baltimore City	461,940	469,640	481,000
Baltimore County	453,660	474,120	489,700
Carroll County	69,340	74,160	77,260
Howard County	164,000	184,000	203,000
Total	1,540,520	1,612,220	1,676,040

Source: Baltimore Metropolitan Council, March, 2002.

Table 4
Harford County
Non - Residential Permit Activity
New Permits Valued \$50,000 and Over

Permit Type	1997		1998		1999		2000		2001	
	Number Of Permits	Square Footage	Number of Permits	Square Footage	Number of Permits	Square Footage	Number of Permits	Square Footage	Number of Permits	Square Footage
Commercial	27	1,164,384	36	502,761	29	356,896	24	315,797	15	345,549
Industrial	14	513,977	0	0	9	490,502	7	330,504	1	0
Institutional	8	70,821	8	145,025	15	202,482	13	213,426	7	78,480
Utilities	2	2,828	2	3,160	2	0	1	20,000	1	240
Other	3	17,698	2	134,338	0	0	0	0	4	87,929
	54	1,769,708	48	785,284	55	1,049,880	45	879,727	28	512,198

Source: Baltimore Metropolitan Council, March, 2002.

Table 5
Harford County
Non - Residential Permit Activity
Additions, Alterations, and Repairs Valued \$50,000 and Over

Permit Type	1997		1998		1999		2000		2001	
	Number Of Permits	Square Footage	Number of Permits	Square Footage	Number of Permits	Square Footage	Number of Permits	Square Footage	Number of Permits	Square Footage
Commercial	49	NA	36	NA	57	NA	47	NA	65	NA
Industrial	5	NA	11	NA	14	NA	6	NA	3	NA
Institutional	14	NA	12	NA	17	NA	20	NA	30	NA
Utilities	5	NA	2	NA	2	NA	7	NA	8	NA
Total	73		61		90		80		106	

NA: Data Not Available

PUBLIC SCHOOLS

Introduction

To assess current and future adequacy of the public school facilities, the capacities of the existing schools, the utilization of the schools, and future populations are analyzed. The data in this report regarding the public school system are aggregated by the elementary/middle/high school districts and include school enrollments, county-rated capacities for each school facility, utilization of each school facility, and 3 year projected school enrollments (Tables 6, 7, and 8). In addition, development information such as building permits issued by dwelling type (Tables 9, 10, and 11) and population and households (Tables 12, 13, and 14) are included in this report. School maps and pupil yield factors by dwelling unit type are included in the Appendix.

Analysis

Each school facility has been analyzed in terms of past growth trends, current conditions and future enrollment projections. The information is based on factual data and is aggregated by the current school districts. The information in this report is based on factual data. Based on the Adequate Public Facilities provision of the County Code, the level of service standard for Public Schools are:

Elementary - 120% of rated capacity within 2 years
Secondary - 120% of rated capacity within 3 years

Preliminary Plans for new developments cannot be approved in elementary school districts where the full-time enrollment currently exceeds or is projected to exceed 120 percent of the capacity within two years. Thirty of the thirty-one elementary schools currently meet adequacy standards. The projected enrollment rate for the Forest Hill Elementary School during the 2003/2004 school year is 810 for an utilization rate of 125 percent. No planning and/or construction funds have been identified at this time. New developments within this attendance area will not be approved but will be reviewed and placed on a waiting list until capacity is available for the year beginning July 1, 2002.

Preliminary plans for new developments cannot be approved in secondary school districts where full-time enrollment currently exceeds or is projected to exceed 120 percent of the capacity within three years. Fifteen of the seventeen middle and high schools in Harford County meet adequacy standards. The projected enrollment for the Southampton Middle School during the 2002/2003 school year is 2,067 for a utilization rate of 137 percent. No planning and/or construction funds have been identified at this time. As occurred during the July 1, 2001 to June 30, 2002 period, any preliminary plans for new developments within this attendance area will not be approved but will be reviewed and placed on a

waiting list until capacity is available for the year beginning July 1, 2002.

The projected enrollment for C. Milton Wright High School during the 2003/2004 school year is 2,016 for a utilization rate of 124 percent. No planning and/or construction funds have been identified at this time. As occurred during the July 1, 2001 to June 30, 2002 period, any preliminary plans for new developments within this attendance area will not be approved but will be reviewed and placed on a waiting list until capacity is available for the year beginning July 1, 2002.

School Enrollment Projection Methodology

The methodology for projecting students utilizes historical data for live births and the number of children enrolled in public schools. Using these data, a series of ratios that reflect grade cohort survival are developed. These ratios include consideration of a number of factors:

1. Births in a given year which affect subsequent kindergarten and first grade enrollments.
2. Net migration of school age children.
3. Net transfer of children between public and private schools.
4. Nonpromotion of children to the next grade level.
5. Dropouts in the later years of secondary school.
6. Shifts between regular grade and upgraded groups other than special education.

This technique of establishing a ratio is used for each successive grade. For example, a ratio is developed between the number of children actually in the first grade in 1985 and the number in the second grade the following year. The ratio, therefore, represents the number of first graders who advance to the second grade. If significant variations exist (such as a rapid increase in home building), then factors such as pupil yields for subdivision activity and development trends must be measured.

In order to ensure accurate projections, development monitoring is a key activity because housing expansion periods have a direct impact on school enrollments. A primary means of calculating projected student enrollment due to a housing expansion period are by using pupil yield factors for new developments.

Pupil yield factors are determined by researching the number of students from a particular community/subdivision that are actually attending their home school. By dividing the number of students accounted for by the number of dwelling units, a pupil generation factor is determined. It is important to note that different pupil yield factors are generated depending on housing type (single family, townhouse, apartment etc.) and school level (elementary, middle and high). Surveys of sample subdivisions to assess an accurate yield factor are completed on a regular basis. (See Appendix)

Table 6
Harford County Elementary Schools
Utilization Chart
2001

Elementary School	Capacity	Actual		Projected							
		2001 - 2002		*2002 - 2003		*2003 - 2004		*2004 - 2005		*2005 - 2006	
		ENROLL	% UTIL.	ENROLL	% UTIL.	ENROLL	% UTIL.	ENROLL	% UTIL.	ENROLL	% UTIL.
Abingdon	925	746	81%	733	79%	719	78%	710	77%	711	77%
Bakerfield	500	493	99%	495	99%	498	100%	498	100%	489	98%
Bel Air	550	507	92%	488	89%	445	81%	446	81%	434	79%
Church Creek	880	670	76%	628	71%	611	69%	598	68%	585	66%
Churchville	410	373	91%	385	94%	391	95%	399	97%	417	102%
Darlington	200	136	68%	124	62%	122	61%	114	57%	116	58%
Deerfield	600	522	87%	558	93%	578	96%	585	98%	599	100%
Dublin	325	234	72%	222	68%	225	69%	221	68%	211	65%
Edgewood	575	386	67%	394	69%	394	69%	404	70%	400	70%
Emmorton	575	506	88%	496	86%	482	84%	496	86%	470	82%
Forest Hill	650	639	98%	526	81%	604	93%	663	102%	701	108%
Forest Lakes	600	485	81%	648	108%	647	108%	666	111%	665	111%
Fountain Green	600	564	94%	563	94%	559	93%	539	90%	547	91%
G. Lisby at Hillsdale	475	391	82%	371	78%	356	75%	337	71%	327	69%
Hall's Cross Rds	600	349	58%	334	56%	321	54%	311	52%	311	52%
Havre de Grace	625	447	72%	441	71%	446	71%	460	74%	469	75%
Hickory	700	621	89%	667	95%	715	102%	755	108%	800	114%
Home/Wakefield	975	892	91%	874	90%	839	86%	820	84%	817	84%
Jarrettsville	585	446	76%	432	74%	410	70%	399	68%	391	67%
Joppatowne	535	508	95%	530	99%	540	101%	551	103%	554	104%
Magnolia	525	532	101%	518	99%	506	96%	506	96%	487	93%
Meadowvale	575	517	90%	486	85%	479	83%	486	85%	481	84%
Norrisville	275	178	65%	168	61%	162	59%	157	57%	150	55%
North Bend	575	458	80%	467	81%	478	83%	486	85%	487	85%
North Harford	550	440	80%	480	87%	487	89%	504	92%	522	95%
Prospect Mill	775	753	97%	753	97%	720	93%	728	94%	730	94%
Ring Factory	600	577	96%	556	93%	522	87%	496	83%	475	79%
Riverside	600	496	83%	486	81%	503	84%	501	84%	511	85%
Roye-Williams	700	565	81%	558	80%	552	79%	552	79%	539	77%
Wm Paca / Old Post Rd	1,035	930	90%	929	90%	923	89%	951	92%	930	90%
Wm. S. James	575	527	92%	501	87%	488	85%	506	88%	506	88%
Youth's Benefit	950	948	100%	884	93%	834	88%	796	84%	754	79%
TOTAL	19,620	16,836	86%	16,695	85%	16,556	84%	16,641	85%	16,586	85%

* The projected enrollments are based on the school district boundaries adopted April 26, 2002.

Table 7
Harford County Middle Schools
Utilization Chart
2001

Middle School	Capacity	Actual		Projected							
		2001 - 2002		*2002 - 2003		*2003 - 2004		*2004 - 2005		*2005 - 2006	
		ENROLL	%UTIL	ENROLL	%UTIL	ENROLL	%UTIL	ENROLL	%UTIL	ENROLL	%UTIL
Aberdeen	1,656	1,265	76%	1,295	78%	1,294	78%	1,280	77%	1,254	76%
Bel Air	1,316	1,265	96%	1,366	104%	1,382	105%	1,269	96%	1,317	100%
Edgewood	1,338	1,331	99%	1,362	102%	1,368	102%	1,331	99%	1,355	101%
Fallston	988	1,118	113%	1,231	125%	1,190	120%	1,124	114%	1,106	112%
Havre de Grace	785	624	79%	666	85%	651	83%	607	77%	552	70%
Magnolia	1,030	912	89%	910	88%	875	85%	856	83%	873	85%
North Harford	1,241	1,129	91%	1,218	98%	1,169	94%	1,202	97%	1,206	97%
Southampton	1,509	2,008	133%	1,720	114%	1,788	118%	1,731	115%	1,699	113%
Total	9,863	9,652	98%	9,768	99%	9,717	99%	9,400	95%	9,362	95%

* The projected enrollments are based on the school district boundaries adopted April 26, 2002.

Source: Harford County Public Schools and Department of Planning and Zoning, October, 2001.

Table 8

**Harford County High Schools
Utilization Chart
2001**

High School	Capacity	Actual		Projected							
		2001 - 2002		*2002 - 2003		*2003 - 2004		*2004 - 2005		*2005 - 2006	
		ENROLL	%UTIL	ENROLL	%UTIL	ENROLL	%UTIL	ENROLL	%UTIL	ENROLL	%UTIL
**Aberdeen	1,209	1,220	101%	1,239	102%	1,202	99%	1,202	99%	1,273	105%
Bel Air	1,423	1,573	111%	1,572	110%	1,625	114%	1,625	114%	1,628	114%
C. Milton Wright	1,624	1,840	113%	1,875	115%	1,943	120%	2,017	124%	2,038	125%
Edgewood	1,379	1,183	86%	1,232	89%	1,349	98%	1,349	98%	1,414	103%
Fallston	1,529	1,651	108%	1,648	108%	1,601	105%	1,601	105%	1,569	103%
Harford Technical	965	1,015	105%	1,054	109%	1,092	113%	1,092	113%	1,066	110%
Havre de Grace	849	663	78%	672	79%	703	83%	703	83%	740	87%
Joppatowne	1,115	1,074	96%	1,057	95%	1,060	95%	1,060	95%	1,059	95%
North Harford	1,454	1,270	87%	1,340	92%	1,384	95%	1,459	100%	1,527	105%
Alternative Education		15									
Total	11,547	11,504	100%	11,689	101%	11,959	104%	12,108	105%	12,314	107%

Total Secondary	21,410	21,156	99%	21,457	100%	21,676	101%	21,508	100%	21,676	101%
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*The projected enrollments are based on the school district boundaries adopted April 26, 2002.

** Capacity has been adjusted to reflect construction of the new Aberdeen High School.

Source: Harford County Public Schools and Department of Planning and Zoning, October 2001.

Table 9
Harford County Residential Building Permit Activity
by Elementary School District
1997 - 2001

SCHOOL	1997					1998					1999					2000					2001				
	BUILDING PERMITS ISSUED BY DWELLING TYPE					BUILDING PERMITS ISSUED BY DWELLING TYPE					BUILDING PERMITS ISSUED BY DWELLING TYPE					BUILDING PERMITS ISSUED BY DWELLING TYPE					BUILDING PERMITS ISSUED BY DWELLING TYPE				
	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL
Abingdon	64	119	0	0	183	50	86	0	0	136	34	131	0	0	165	18	133	0	0	151	5	170	0	0	175
Bakersfield	31	10	0	1	42	33	23	0	1	57	41	8	0	1	50	39	15	0	0	54	7	5	0	1	13
Bel Air	25	16	0	0	41	64	66	0	0	130	61	52	0	0	113	60	47	0	0	107	24	38	0	0	62
Church Creek	29	1	1	1	32	7	5	4	0	16	24	8	19	0	51	16	20	23	0	59	16	16	21	0	53
Churchville	13	0	0	1	14	29	0	0	0	29	22	0	0	1	23	26	0	0	0	26	54	0	0	0	54
Darlington	12	0	0	3	15	14	0	0	3	17	12	0	0	2	14	7	0	0	2	9	14	0	0	0	14
Deerfield	36	0	0	0	36	30	0	0	0	30	36	0	0	0	36	67	8	0	0	75	100	18	0	0	118
Dublin	11	0	0	3	14	7	0	0	1	8	15	0	0	1	16	5	0	0	1	6	15	0	0	3	18
Edgewood	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emmorton	12	19	0	0	31	4	0	0	0	4	16	20	0	0	36	27	24	0	0	51	77	55	1	0	133
Forest Hill	74	35	60	1	170	150	30	60	0	240	151	86	68	1	306	135	95	39	1	270	131	125	39	1	296
Forest Lakes	94	21	0	0	115	26	9	0	0	35	26	7	0	0	33	45	0	0	1	46	85	0	0	0	85
Fountain Green	2	0	0	0	2	1	0	0	0	1	1	0	0	0	1	36	0	0	0	36	77	0	0	0	77
G. Lisby at Hillsdale	7	0	0	0	7	13	0	1	0	14	18	0	5	0	23	20	0	0	0	20	13	0	0	1	14
Hall's Cross Roads	0	0	0	0	0	0	18	0	0	18	2	0	0	0	2	16	0	0	0	16	9	0	0	0	9
Havre de Grace	3	0	17	0	20	7	0	0	0	7	4	0	0	0	4	4	0	0	0	4	7	2	0	0	9
Hickory	123	30	0	1	154	132	51	0	0	183	114	40	6	1	161	58	7	0	2	67	39	0	0	1	40
Homestead/Wakefield	44	1	0	0	45	66	7	0	0	73	97	4	0	0	101	80	6	0	0	86	64	5	0	0	69
Jarrettsville	14	0	0	0	14	21	0	0	1	22	34	0	0	1	35	20	0	0	1	21	30	0	0	1	31
Joppatowne	58	40	12	0	110	45	30	25	0	100	26	38	0	0	64	56	25	0	0	81	121	14	0	0	135
Magnolia	17	0	0	0	17	25	0	0	0	25	16	0	0	0	16	0	0	0	0	0	0	0	0	0	0
Meadowvale	30	30	0	0	60	41	20	0	2	63	40	33	24	0	97	14	6	0	0	20	11	0	0	1	12
Norrisville	15	0	0	0	15	26	0	0	5	31	21	0	0	1	22	16	0	0	3	19	18	0	0	2	20
North Bend	28	0	0	3	31	31	0	0	0	31	42	0	0	2	44	40	0	0	4	44	34	0	0	3	37
North Harford	30	0	0	5	35	37	0	2	3	42	35	0	0	11	46	29	0	0	6	35	38	0	0	9	47
Prospect Mill	59	0	40	0	99	86	0	39	0	125	72	0	55	1	128	64	0	75	2	141	121	13	126	0	260
Ring Factory	36	35	36	0	107	36	59	3	0	98	18	79	0	0	97	11	7	0	0	18	3	0	0	0	3
Riverside	7	0	0	0	7	9	0	0	0	9	22	20	0	0	42	4	21	0	0	25	4	0	0	1	5
Roye-Williams	0	0	0	0	0	0	0	0	1	1	2	0	0	0	2	0	0	0	1	1	0	0	0	1	1
Wm. Paca/Old Post Rd	43	26	0	1	70	42	30	1	0	73	63	21	0	1	85	77	16	0	0	93	86	17	0	0	103
Wm. S. James	1	0	0	0	1	3	0	0	0	3	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1
Youth's Benefit	90	0	0	0	90	90	0	0	1	91	76	0	0	1	77	47	0	0	0	47	43	0	0	0	43
TOTAL	1,008	383	166	20	1,577	1,126	434	135	18	1,713	1,141	547	177	25	1,890	1,038	430	137	24	1,629	1,247	478	187	25	1,937

NOTE: Permits totals do not reflect cancelled permits.

Source: Harford County Dept. of Planning & Zoning, March, 2002.

KEY:
SF = Single Family Dwelling
TH = Townhouse
APT / CONDO = Apartment / Condominium
MH = Mobile Home

Table 10

**Harford County Residential Building Permit Activity
by Middle School District
1997 - 2001**

	1997					1998					1999					2000					2001				
	BUILDING PERMITS ISSUED BY DWELLING TYPE					BUILDING PERMITS ISSUED BY DWELLING TYPE					BUILDING PERMITS ISSUED BY DWELLING TYPE					BUILDING PERMITS ISSUED BY DWELLING TYPE					BUILDING PERMITS ISSUED BY DWELLING TYPE				
SCHOOL	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL
Aberdeen	73	10	1	2	86	69	41	5	2	117	88	16	24	2	130	101	35	23	1	160	57	21	21	3	102
Bel Air	94	55	36	0	185	109	66	3	0	178	129	103	0	0	232	116	37	0	0	153	148	60	1	0	209
Edgewood	144	146	0	2	292	124	121	1	0	246	137	152	0	1	290	162	157	0	1	320	200	205	0	0	405
Fallston	192	21	0	0	213	125	9	36	1	171	113	8	31	1	153	103	0	0	2	105	137	0	0	0	137
Havre de Grace	45	30	17	3	95	61	20	0	5	86	56	33	24	2	115	25	6	0	2	33	32	2	0	1	35
Magnolia	82	40	12	0	134	79	30	25	0	134	64	58	0	0	122	60	46	0	0	106	125	14	0	1	140
North Harford	93	0	0	10	103	120	0	2	9	131	142	0	0	15	157	108	0	0	14	122	129	0	0	16	145
Southampton	285	81	100	3	469	439	147	63	1	650	412	177	98	4	691	363	149	114	4	630	419	176	165	4	764
TOTAL	1,008	383	166	20	1,577	1,126	434	135	18	1,713	1,141	547	177	25	1,890	1,038	430	137	24	1,629	1,247	478	187	25	1,937

NOTE: Permits totals do not reflect cancelled permits.

Source: Harford County Department of Planning and Zoning, March, 2002.

KEY:

SF = Single Family Dwelling
TH = Townhouse
APT / CONDO = Apartment / Condominium
MH = Mobile Home

Table 11

**Harford County Residential Building Permit Activity
by High School District
1997 - 2001**

	1997					1998					1999					2000					2001				
	BUILDING PERMITS ISSUED BY DWELLING TYPE					BUILDING PERMITS ISSUED BY DWELLING TYPE					BUILDING PERMITS ISSUED BY DWELLING TYPE					BUILDING PERMITS ISSUED BY DWELLING TYPE					BUILDING PERMITS ISSUED BY DWELLING TYPE				
SCHOOL	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL
Aberdeen	73	10	1	2	86	69	41	5	2	117	88	16	24	2	130	101	35	23	1	160	57	21	21	3	102
Bel Air	112	55	36	0	203	141	69	3	0	213	165	116	0	0	281	144	37	0	0	181	153	60	1	0	214
C. Milton Wright	245	46	40	3	334	377	114	39	1	531	341	79	55	4	479	330	54	75	4	463	414	51	126	4	595
Edgewood	144	146	0	2	292	124	121	1	0	246	137	152	0	1	290	162	157	0	1	320	200	205	0	0	405
Fallston	214	56	60	0	330	155	39	60	1	255	148	93	74	1	316	108	95	39	2	244	137	125	39	0	301
Havre de Grace	45	30	17	3	95	61	20	0	5	86	56	33	24	2	115	25	6	0	2	33	32	2	0	1	35
Joppatowne	82	40	12	0	134	79	30	25	0	134	64	58	0	0	122	60	46	0	0	106	125	14	0	1	140
North Harford	93	0	0	10	103	120	0	2	9	131	142	0	0	15	157	108	0	0	14	122	129	0	0	16	145
TOTAL	1,008	383	166	20	1,577	1,126	434	135	18	1,713	1,141	547	177	25	1,890	1,038	430	137	24	1,629	1,247	478	187	25	1,937

NOTE: Permits totals do not reflect cancelled permits.

Source: Harford County Department of Planning and Zoning, March, 2002.

KEY:

SF = Single Family Dwelling
TH = Townhouse
APT / CONDO = Apartment / Condominium
MH = Mobile Home

Table 12
Harford County Population and Households
by Elementary School District

1997 - 2001

SCHOOL	1997*		1998*		1999*		2000*		2001*	
	Households	Population	Households	Population	Households	Population	Households	Population	Households	Population
Abingdon	3,186	8,769	3,359	9,211	3,488	9,526	3,645	9,393	3,788	10,356
Bakerfield	2,702	7,440	2,742	7,520	2,797	7,637	2,844	7,050	2,895	7,914
Bel Air	3,029	8,339	3,068	8,413	3,192	8,716	3,299	8,381	3,401	9,296
Churchville	1,879	5,173	1,909	5,235	1,925	5,256	1,973	5,434	1,998	5,461
Church Creek	2,867	7,894	2,881	7,899	2,908	7,942	2,930	7,714	2,986	8,162
Darlington	956	2,633	971	2,661	987	2,695	1,000	2,698	1,009	2,757
Deerfield	1,872	5,154	1,906	5,227	1,935	5,284	1,969	5,925	2,040	5,577
Dublin	1,220	3,358	1,233	3,381	1,241	3,389	1,256	3,400	1,262	3,449
Edgewood	1,388	3,821	1,388	3,806	1,389	3,793	1,389	3,955	1,389	3,797
Emmorton	2,261	6,223	2,290	6,279	2,294	6,264	2,328	6,234	2,376	6,496
Forest Hill	1,947	5,360	2,108	5,781	2,336	6,380	2,627	7,492	2,884	7,882
Forest Lakes	2,086	5,743	2,195	6,020	2,229	6,086	2,260	6,554	2,304	6,297
Fountain Green	2,306	6,349	2,308	6,329	2,309	6,306	2,310	6,544	2,344	6,408
G. Lisby at Hillsdale	1,793	4,937	1,800	4,935	1,813	4,952	1,835	4,825	1,854	5,068
Hall's Cross Roads	1,844	5,077	1,844	5,056	1,861	5,083	1,863	4,718	1,878	5,134
Havre de Grace	2,959	8,145	2,978	8,164	2,984	8,150	2,988	6,885	2,992	8,178
Hickory	1,876	5,164	2,022	5,545	2,196	5,997	2,349	6,930	2,413	6,595
Homestead/Wakefield	4,737	13,041	4,780	13,106	4,849	13,243	4,945	12,966	5,027	13,740
Jarrettsville	2,100	5,780	2,113	5,793	2,134	5,827	2,167	6,432	2,187	5,978
Joppatowne	2,818	7,757	2,922	8,013	3,017	8,240	3,078	7,888	3,155	8,624
Magnolia	1,444	3,975	1,460	4,003	1,484	4,052	1,499	4,344	1,499	4,097
Meadowvale	2,114	5,820	2,171	5,953	2,231	6,092	2,323	6,391	2,342	6,402
Norrisville	791	2,179	806	2,209	835	2,281	856	2,493	874	2,389
North Bend	2,054	5,655	2,084	5,714	2,113	5,771	2,155	6,431	2,197	6,005
North Harford	1,826	5,027	1,859	5,098	1,899	5,187	1,943	5,684	1,976	5,402
Prospect Mill	2,933	8,073	3,027	8,299	3,145	8,590	3,267	9,519	3,401	9,296
Ring Factory	2,050	5,644	2,152	5,900	2,245	6,131	2,337	6,727	2,354	6,435
Riverside	2,566	7,064	2,573	7,054	2,581	7,049	2,621	7,068	2,645	7,229
Roye-Williams	1,454	4,003	1,454	3,987	1,455	3,974	1,457	4,747	1,458	3,985
Wm. Paca/Old Post Rd	4,809	13,240	4,876	13,370	4,945	13,505	5,026	12,999	5,114	13,980
Wm. S. James	1,884	5,187	1,885	5,169	1,888	5,156	1,888	5,791	1,889	5,163
Youth's Benefit	4,995	13,751	5,080	13,930	5,167	14,111	5,240	14,978	5,285	14,446
TOTAL	74,747	205,776	76,244	209,061	77,872	212,667	79,667	218,590	81,215	222,000

Source: Harford County Dept. of Planning & Zoning, May, 2002.

* Population figures have been revised to reflect 2000 Census data as of April 1.

Table 13
Harford County Population and Households
by Middle School District

1997 - 2001

SCHOOL	1997*		1998*		1999*		2000*		2001*	
	Households	Population	Households	Population	Households	Population	Households	Population	Households	Population
Aberdeen	11,393	31,364	11,474	31,463	11,586	31,640	11,709	31,085	11,861	32,422
Bel Air	9,836	27,078	10,012	27,452	10,181	27,803	10,401	28,385	10,546	28,828
Edgewood	11,994	33,021	12,272	33,649	12,506	34,153	12,781	34,446	13,085	35,769
Fallston	8,385	23,083	8,587	23,546	8,750	23,895	8,895	25,649	8,995	24,587
Havre de Grace	6,078	16,732	6,168	16,913	6,250	17,068	6,359	16,105	6,390	17,468
Magnolia	6,775	18,650	6,902	18,925	7,029	19,196	7,145	19,257	7,246	19,806
North Harford	7,504	20,657	7,601	20,843	7,726	21,099	7,875	23,138	7,991	21,843
Southampton	12,783	35,190	13,228	36,271	13,846	37,812	14,502	40,525	15,101	41,277
TOTAL	74,747	205,776	76,244	209,061	77,872	212,667	79,667	218,590	81,215	222,000

Source: Harford County Dept. of Planning & Zoning, May, 2002.

*Population figures have been revised to reflect 2000 Census data as of April 1.

Table 14
Harford County Population and Households
by High School District

1997 - 2001

SCHOOL	1997*		1998*		1999*		2000*		2001*	
	Households	Population	Households	Population	Households	Population	Households	Population	Households	Population
Aberdeen	11,147	30,687	11,228	30,788	11,340	30,968	11,463	30,409	11,615	31,749
Bel Air	12,003	33,044	12,179	33,393	12,348	33,721	12,568	33,412	12,740	34,825
Edgewood	11,994	33,021	12,272	33,649	12,506	34,153	12,781	34,446	13,221	36,140
Fallston	10,007	27,549	10,209	27,994	10,372	28,325	10,517	30,228	10,821	29,579
Havre de Grace	6,078	16,732	6,168	16,913	6,250	17,068	6,359	16,105	6,591	18,016
Joppatowne	6,775	18,650	6,902	18,925	7,029	19,196	7,145	19,257	7,176	19,616
North Harford	7,544	20,767	7,641	20,953	7,766	21,209	7,915	23,243	8,016	21,911
C. Milton Wright	9,200	25,326	9,645	26,447	10,263	28,027	10,919	31,490	11,035	30,164
TOTAL	74,747	205,776	76,244	209,061	77,872	212,667	79,667	218,590	81,215	222,000

Source: Harford County Dept. of Planning & Zoning, May, 2002

*Population figures have been revised to reflect 2000 Census data as of April 1.

WATER AND SEWERAGE

Introduction

The data included in this section for the water and sewerage system are aggregated by the water & sewer service area, which essentially reflects the Development Envelope as defined in the 1996 Harford County Land Use Element Plan. Additional information is included in this report on water/sewerage usage by dwelling type and for nonresidential uses, an inventory of existing water consumption/sewerage flows, demand projections (including the basis for their computation), and a list of capital projects contained in the County's Capital Improvements Program for expanding facilities - including project status. This information is extracted from the "2000 Water and Sewer Adequate Public Facilities Report," and can be found on pages 24 - 27 of this report.

Water and Sewer Facility Projection Methodology

Water:

The Harford County water service area is divided into four pressure zones because of varying topography within the Development Envelope. To provide an adequate supply of water, the transmission lines, pumping and storage facilities for all zones must be sized for estimated future demands. In 1990, the average daily water demand by customers served by the County's central system was approximately 5.9 MGD, with a corresponding maximum day demand of approximately 7.6 MGD. In 2001, the County's average day and maximum day demands were 11.8 MGD and 17.2 MGD respectively. To keep pace with the projected growth, staged construction programs are established that distribute required capital costs for improvements and/or additions to the County's system over a period of years.

There are seven multiple-use water systems that are not maintained or operated by Harford County, but are subject to the APF provision of the County Code. These systems are listed below:

- 1) Maryland-American Water Co.
- 2) Conowingo Power Co.
- 3) Campus Hills Water Works Inc.
- 4) Darlington
- 5) Greenridge Utilities Inc.
- 6) Lakeside Vista
- 7) Bel Air Heights

Sewerage:

The sewage flows to Harford County's existing Sod Run and Joppatowne Wastewater Treatment Plants (WWTP) originate from a portion of the Development Envelope. The area between the municipalities of Aberdeen and Havre de Grace as well as the cities themselves, are within the Development Envelope and are served by the municipal sewerage facilities. A complete "Sewer System Capacity Analysis" is included on pages 8 - 10 and pages 33 - 154 of the 2001 Water and Sewer Adequate Public Facilities Report.

The average daily influent flow to the Sod Run WWTP in 2001 was approximately 11.5 MGD, exclusive of recycle flows and septage. The average daily influent flow to the Joppatowne WWTP in 2001 was approximately 0.810 MGD. The determination of future wastewater flows to wastewater treatment plants are made by using population and household projections developed by Harford County Department of Planning and Zoning for the years 1995 through 2010. The projections were distributed by local transportation zone (LTZs) by aggregating the ultimate development in terms of equivalent dwelling units into sewerage drainage areas. In order to keep pace with projected growth, construction of an expansion of the Sod Run Wastewater Treatment Plant from 12 MGD in 1995 to 20 MGD by 2000 had been initiated. There are two private multi-use sewerage systems in the County. The Conowingo-Susquehanna Power Company provides sewerage service to the Conowingo Power Plant and some surrounding residences and the Swan Harbor Dell Mobile Home Park that serves about 160 units.

Table 15

JANUARY - DECEMBER 2001 WATER CONSUMPTION & SEWAGE GENERATION

This table reflects the total number of water and sewer customers and the water consumption and sewage generations for residential and commercial/industrial users.

	2001
Total Number of Connections	35,856
WATER	
Average Water Production	11.8 MGD
Maximum Day Water Production	17.2 MGD
Average Water Usage per Connection (gal/day)	353
Residential Unit Water Usage (gal/day)	167
Average Commercial/Industrial Water Usage (gal/day)	4,723
SEWAGE	
Average Sewage Flows	12.3 MGD
Maximum Day Sewage Flows	21.2 MGD
Average Sewage per Connection (gal/day)	355
Residential Sewage Generation (gal/day)	167
Average Commercial/Industrial Sewage Generation (gal/day)	4,723

- MGD = Million Gallons per Day

Table 16

HARFORD COUNTY SYSTEM WATER PRODUCTION PROJECTIONS

SYSTEM WIDE RESIDENTIAL/ COMMERCIAL INDUSTRIAL WATER DEMAND	YEAR													
	1990	1993	1994	1995	1996	1997	1998	1999	2000	2001	2005	2010	2015	2020
FIRST ZONE														
Avg. Day, mgd	3.4	3.2	3.4	4.1	4.05	4.5	4.5	4.6	3.5	5.1	6.2	7.0	9.0	10.4
Max. Day, mgd	4.3	4.6	4.8	6.0	4.8	6.5	6.6	6.5	4.6	9.1	8.4	9.9	15.3	18.2
Total of Second, Third and Fourth Zones Requirements														
Avg. Day, mgd	2.5	3.5	3.7	3.8	4.5	5.0	5.0	5.7	5.9	6.4	6.3	7.9	9.0	9.9
Max. Day, mgd	3.3	3.9	4.0	5.6	5.9	6.8	6.9	7.3	6.9	7.1	10.0	12.0	17.7	19.5
Aberdeen														
Avg. Day, mgd	0.0	0.0	0.0	0.5	.05	.03	.01	0.3	0.26	0.26	0.5	0.5	0.5	0.5
Max. Day, mgd **	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Maryland-American Water Company														
Avg. Day, mgd	0.0	0.0	0.0	0.0	0.0	.07	.01	.01	.19	.01	.01	.01	.01	.01
Max. Day, mgd **	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Total														
Avg. Day, mgd	5.9	6.7	7.1	8.4	8.6	9.6	9.5	10.6	9.9	11.8	13.0	15.4	18.5	20.8
Max. Day, mgd	7.6	8.5	8.8	12.1	11.2	14.3	14.5	14.8	12.5	17.2	19.4	22.9	34.0	38.7

** - Allocated maximum day flow projections per service agreements.

Table 17

**Harford County Present and Projected Sewerage Demands and
Planned Capacities in Million Gallons Per Day - (MGD)**

	SERVICE AREAS			
	PLANNING YEAR	HARFORD COUNTY	JOPPATOWNE	SPRING MEADOWS
PER CAPITA SEWAGE FLOW	1993-2010	90	80	65
RESIDENTIAL POPULATION SERVED	1993	70,732	7,000	153
	1994	78,849	7,000	153
	1995	81,696	7,000	153
	1996	85,449	7,300	153
	1997	86,000	7,400	153
	1998	91,547	7,500	153
	1999	97,198	7,600	153
	2000	99,057	7,700	153
	2001	102,739	7,900	153
	2005	104,000	8,800	153
	2010	113,000	9,500	153
DOMESTIC FLOW (ADF)	1993	7.7	.59	.01
	1994	7.9	.56	.01
	1995	7.7	.56	.01
	1996	8.1	.56	.01
	1997	7.8	.56	.01
	1998	8.4	.71	.01
	1999	8.6	.64	.01
	2000	9.3	.65	.01
	2001	9.2	.65	.01
	2005	9.4	.65	.01
	2010	10.0	.76	.01
INDUSTRIAL FLOW (ADF)	1993	.4	0.0	0
	1994	.5	0.0	0
	1995	.5	0.0	0
	1996	.5	0.0	0
	1997	.5	0.0	0
	1998	.5	0.0	0
	1999	.5	0.0	0
	2000	.6	0.0	0
	2001	.6	0.0	0
	2005	.6	0.0	0
	2010	.6	0.0	0
INFILTRATION/INFLOW (ADF)	1993	1.0	.19	0
	1994	1.4	.19	0
	1995	1.4	.19	0
	1996	1.5	.19	0
	1997	1.4	.19	0
	1998	1.6	.19	0
	1999	1.7	.19	0
	2000	1.7	.19	0
	2001	1.7	.12	0
	2005	1.7	.19	0
	2010	1.9	.19	0
TOTAL FLOW	1993	9.1	.78	.01
	1994	9.8	.75	.01
	1995	9.6	.75	.01
	1996	10.1	.75	.01
	1997	9.7	.75	.01
	1998	10.5	.90	.01
	1999	10.8	.80	.01
	2000	11.6	.84	.01
	2001	11.5	.81	.01
	2005	11.7	.84	.01
	2010	12.5	.95	.01
SYSTEM CAPACITY	1993	10.0	.75	.01
	1994	12.0	.75	.01
	1995	12.0	.75	.01
	1996	12.0	.75	.01
	1997	12.0	.95	.01
	1998	12.0	.95	.01
	1999	20.0	.95	.01
	2000	20.0	.95	.01
	2001	20.0	.95	.01
	2005	20.0	.95	.01
	2010	20.0	.95	.01

Table 18

2001 Existing Water & Sewer Capital Projects

The Capital Improvement Program establishes projects for expanding water and sewer facilities. This list of 2001 Capital Projects includes the projects status.

Project Number	Project Name	Project Status
6440	Infiltration/Inflow	Implementation of the program
6458	Lower Bynum Run Parallel Interceptor	Phase 3: Under construction Phases 4 and 5: Under design
6486	Whiteford - Cardiff Sewer Petition	Construction complete
6509	Singer Road Water Transmission Main	Construction complete
6518	Red Pump Road Transmission Main Parallel	Construction complete
6540	Country Walk Tank & Booster Station	Under construction
6575	Tollgate Road and Plumtree Road Water	Construction complete
6587	Route 7 Sewer Extension	Under design
6591	Perryman Well Field Improvements	Under construction
6596	Connolly Road Water Petition	Construction complete
6603	Abingdon Road Water Main Phase III	Design complete
6608	Bush Creek P.S. Force Main Surge Facility Modification	Under design
6611	Old Joppa Road Sewer Petition	Under design
6620	Perryman WTP Granular Activated Carbon Relocation	Design complete
19284	Leeswood Garth Sewer Parallel	Preparing for construction

ROAD SYSTEM

Introduction

The information for the APF Road System contained in this section includes the following: signalized and unsignalized intersection capacity analysis results - existing conditions (Tables 19 and 20), average daily count locations (Table 21), a list of approved county capital projects funded for construction in FY 02 (Table 22), and a list of state consolidated transportation program projects funded for construction FY 02 (Table 23). This information will help identify existing deficiencies in the road system and guide both County and State capital project funding to the most critical road projects.

The intent of the APF Roads provisions of the County Code is to create a mechanism that requires proposed development to make appropriate and reasonable road improvements, based on the proposed development's impact to the road.

Road Intersection Analysis Methodology

A key feature of the APF Road Intersection regulations is the requirement for preparation of a traffic impact analysis (TIA) for residential and nonresidential uses that generate more than 249 trips. Proposed development located within the Route 40 Overlay District will not be required to submit a Traffic Impact Analysis unless the proposed use will generate 1,500 trips per day at the time of preliminary/site plan review. The TIA provides information regarding the impact of generated trips from proposed land uses on traffic safety and traffic operation within a designated area and recommending solutions to mitigate the impact. The method of conducting a Traffic Impact Analysis is outlined in the "Harford County Traffic Impact Analysis Guidelines".

A complete TIA includes the following:

- The designation of the study area as required in the APF regulations based on whether the proposed development is inside or outside of the Development Envelope.

Inside the Development Envelope :

The TIA shall include all the existing County and State roads from the point of entrance of site to the second intersection of an arterial roadway or higher functional classification road, in all directions. Developments which generate 1,500 or more trips per day may be required to expand the study area.

Outside the Development Envelope :

The TIA shall include all existing County and State roads from point of entrance to first intersection of a major collector or higher classification road, in all directions.

- An analysis of existing conditions including traffic counts, lane configuration, and signal timings.
- An analysis of background conditions without site development, including growth in background traffic, future traffic generated by nearby proposed developments and the determination of Levels of Service with any approved/funded State and County Capital projects.
- An analysis of the projected conditions with site development, including the traffic being generated by the proposed development and the background traffic.
- An explanation of the results with recommended improvements as necessary.

The Developer is required to provide improvements where the trips generated by the development reduce the Level Of Service (LOS) from adequate to a LOS below the standard. The standard for intersections within the Development Envelope will be LOS D. If existing LOS is E or F at an intersection within the Development Envelope, the developer must mitigate the impact of the development's new trips. The standard for intersections outside the Development Envelope will be LOS C. If the existing LOS is D or lower, then the developer must mitigate the impact of the development's new trips.

Table 19
Signalized Intersection Capacity
Level Of Service And Delay In Seconds
1998 - 2001

Intersection	1998 Peak Hour Level Of Service / Delay In Seconds	1999 Peak Hour Level Of Service / Delay In Seconds	2000 Peak Hour Level Of Service / Delay In Seconds	2001 Peak Hour Level Of Service / Delay In Seconds
Maryland Route 7 and U.S. Route 40	D / 27.9		D / 36.6	
Maryland Route 924 and Moores Mill Road	C / 20.1		C / 31.0	
Maryland Route 24 and Trimble Road	D / 30.1		C / 32.6	
Maryland Route 136 and Maryland Route 165	B / 7.4		B / 15.1	
Maryland Route 152 and U.S. Route 1	F / >60		D / 49.7	
Maryland Route 24 and U.S. Route 1	D / 40.0		D / 50.8	
Maryland Route 152 and Trimble Road	D / 29.0		C / 26.8	
Maryland Route 24 and Jarrettsville Road	C / 18.1		C / 34.5	
Maryland Route 543 and Wheel Road	B / 11.5		C / 25.7	
Maryland Route 152 and Hanson Road	Unsignalized		C / 25.2	
Maryland Route 22 and Brier Hill Road		C / 31.6		C / 29.9
Maryland Route 22 and Maryland Route 136		C / 28.5		C / 20.3
Maryland Route 24 and Bel Air South Parkway		D / 54.9		D / 52.1
Maryland Route 24 and Plumtree Road		C / 22.6		C / 24.4
Maryland Route 24 and Ring Factory Road		D / 53.7		C / 20.8
Maryland Route 24 and Maryland Route 755		D / 38.8		D / 43.8
Maryland Route 24 and Maryland Route 924 (Tollgate)		F / >60		F / 88.7
Maryland Route 543 and U.S. Route 1		C / 32.2		C / 27.5
Maryland Route 543 and Maryland Route 22		D / 45.0		D / 36.1
Maryland Route 924 and Abingdon Road		D / 48.1		D / 37.9

Table 20
Unsignalized Intersection Capacity
Level Of Service And Delay In Seconds
1998 - 2001

Intersection	1998 Worst Movement	1999 Peak Hour Level Of Service / Delay In Seconds	2000 Peak Hour Level Of Service / Delay In Seconds	2001 Peak Hour Level Of Service / Delay In Seconds
Interstate 95 and Maryland Route 24 Ramp	F / All Movements		F / >60	
Maryland Route 24 and Maryland Route 165	B / Eastbound		C / 22.2	
Maryland Route 152 and Hanson Road	F / Westbound		Signalized	
Maryland Route 24 and Plumtree Road	F / Eastbound		Signalized	
Maryland Route 152 and Singer Road	F / Westbound		F / 475.0	
Maryland Route 924 and Plumtree Road		F / >60		F / 92.8
Maryland Route 7 and Maryland Route 159		B / 13.5		B / 11.5
Maryland Route 24 and Forest Valley Road		F / >60		F / 171.4
Maryland Route 159 and Spesutia Road		B / 12.4		B / 14.5

Table 21

48 Hour Average Weekday Daily Traffic Volume And Locations

1998 - 2001

Road Name	Location	1998 Average Daily Count	1999 Average Daily Count	2000 Average Daily Count	2001 Average Daily Count
Beards Hill Road	North of Churchville Road	10,566		10,602	
Carrs Mill Road	North of Maryland Route 152	N/A		7,533	
Chapel Road	North of Interstate 95	1,692		1,752	
Jarrettsville Road	East of Maryland Route 24	7,168		9,006	
Jarrettsville Road	West of Maryland Route 24	N/A		6,498	
Maryland Route 7	West of Maryland Route 24	7,257		6,250	
Moore's Mill Road	West of Coconut Court	10,400		12,693	
Moore's Mill Road	West of Old English Court	8,588		9,226	
Pleasantville Road	North of Putnam Road	2,516		3,104	
Singer Road	East of Maryland Route 24	9,720		N/A*	
Stepney Road	North of Interstate 95	1,303		1,311	
U.S. Route 1	North of Maryland Route 152	24,125		26,150	
U.S. Route 40	North of Maryland Route 24	19,210		17,341	
Abingdon Road	North of Interstate 95		8,252		9,395
Hanson Road	South of Silverbell Road		3,188		3,094
Hanson Road	West of Maryland Route 24		12,547		11,738
Maryland Route 24	North of Singer Road		41,850		43,900
Maryland Route 152	South of U.S. Route 1		25,975		27,025
Maryland Route 543	South of Maryland Route 22		16,675		17,625
Plumtree Road	East of Maryland Route 24		3,985		4,532
Ring Factory Road	West of Maryland Route 24		4,433		4,515
Ring Factory Road	East of Maryland Route 24		8,104		12,082
Singer Road	West of Maryland Route 24		10,783		11,739
Trimble Road	East of Maryland Route 24		4,977		4,226
Trimble Road	West of Maryland Route 24		6,634		7,039
Vale Road	West of U.S. Route 1 Overpass		N/A		8,656

* Road closed (construction)

Table 22
List of Approved County Capital Projects
Funded for Construction in FY 02

Bridge Inspection Program	Inspection
Greene Road Bridge	Reconstruction
Moores Mill Road Bridge	Reconstruction
Singer Road Bridge	Reconstruction
Southampton Road Bridge	Reconstruction

Table 23
State Consolidated Transportation Program
Funded for Construction in FY 02

Churchville Road from Andreas Drive to Maryland Route 136	Resurface
Norrisville Road from Maryland Route 146 to Maryland Route 138	Resurface
Pulaski Highway from Robin Hood Road to Hatem Memorial Bridge	Resurface
Dublin Road from Maryland Route 543 to Scarboro Road	Resurface
Prospect Road, structures over tributaries of Broad Creek	Replacement
Churchville Road from Maryland 136 to Maryland 155	Realignment
Emmorton Road from Patterson Mill Road to Ring Factory Road	Center Turn Lane

APPENDIX

PUPIL YIELD FACTORS

Forty subdivisions were selected from various geographic locations throughout Harford County, to include single family dwellings, townhouse units, apartments/condominium units, and mobile home units. The subdivisions selected represented newly constructed and established subdivisions ranging in size from 28 units to 2,423 units. Additionally, subdivisions were selected to provide a broad range of attendance areas across the County. A count was made of each student who resided in each of the forty subdivisions studied. The data were tabulated by unit type, and the specific pupil yields were calculated for each subdivision in the elementary, middle, and high schools.

UNIT TYPE	GRADES		
	K-5	6-8	9-12
Single Family	.31	.16	.20
Townhome	.23	.09	.15
Apartments (2 Bdrms)	.08	.03	.01
Condo (2+ Bdrms)	.08	.03	.01
Mobile Home	.11	.04	.06

